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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,582	08/25/2003	Junichi Takeuchi	NEC F-11100 DIV	3591

27667 7590 07/18/2005

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EXAMINER	
NGUYEN, LONG T	
ART UNIT	**PAPER NUMBER**
2816	

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/647,582	TAKEUCHI, JUNICHI	
	Examiner	Art Unit	
	Long Nguyen	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7-12,14,17,20,21,24,25,27 and 28* is/are allowed.

6)☒ Claim(s) *13,15,16,18,19,22,23,26,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/874,737.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: in the pre-amendment to the specification filed on 8/25/03, on the 3rd line of the newly inserted paragraph (for the divisional information), "2001." should be changed --2001, now U.S. Patent No. 6,646,482.-- so that the divisional information is clear. Appropriate correction is required.

Claim Objections

2. Claims 13, 15, 16, 19, 22, 26 and 29 are objected to because of the following informalities:

Claim 13, line 15, it is suggested that "signal." be changed to --signal of said pair of push-pull circuits.-- to avoid a confusion/unclear "an input signal" of which circuit

Claim 15, line 14, "on said" should be changed to --on, said--.

Claim 16, line 17, it is suggested that "signal." be changed to --signal of said pair of push-pull circuits.-- to avoid a confusion/unclear "an input signal" of which circuit.

Claim 19, line 15, it is suggested that "signal." be changed to --signal of said pair of push-pull circuits.-- to avoid a confusion/unclear "an input signal" of which circuit.

Claim 22, lines 15-16, it appears that "said control signal turns on or off said third bias current provided by said third current source circuit, and" need to be deleted since it is redundant of the recitation recited on lines 10-13 of the claim.

Also in claim 22, line 17, it is suggested that "is constant." be changed to --is a constant current.--.

Claim 26, line 17, it is suggested that "signal." be changed to --signal of said pair of push-pull circuits.-- to avoid a confusion/unclear "an input signal" of which circuit.

Claim 29, line 17, "current a" should be changed as --current as a--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Hogeboom (USP 6,194,949).

With respect to claim 13, Figure 1 of the Hogeboom reference discloses a driver, which includes: a pair of push-pull circuits (PMOS 30 and NMOS 50, and PMOS 20 and NMOS 40) for driving a load circuit complementary (driving downstream circuitry at differential outputs 200 and 210); a first current source circuit (71) for providing a first bias current (Idc which is current of transistor 71) flown to the pair of the push-pull circuits; a second current source circuit (81) for having the first bias current (Idc which is the current of transistor 81) flown from the pair of the push-pull circuits; a third current source circuit (70) for providing capable of having a second bias current (Ida which is the current of transistor 70) flown to the pair of the push-pull circuits; a fourth current source circuit (80) capable of having the second bias current (Ida which

is the current of transistor 80) flown from the pair of the push-pull circuits; and a control circuit (90, Figure 2) for varying the second bias current (Ida) flown by the third current circuit (70) and the second bias current (Ida) flown by the fourth current source circuit (80) according to a control signal (signal at node 220 in Figure 2). Note that the control signal (220, Figure 2) is independent of drain voltages of the first to fourth current source circuits (signal 220 in Figure 2 is independent of drain voltages of transistors 70, 71, 80 and 81 in Figure 1) and independent of an input signal (signal 220 in Figure 2 is independent of input signal of the push-pull circuits (30 and 50, 40 and 60)).

5. Claims 15, 16, 18, 19, 22, 23, 26, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Bridgewalter, Jr. (USP 5,949,253).

Note, for claim 15, 16, 18 and 26, Figure 10 of the Bridgewalter, Jr. reference discloses a driver, which includes: a pair of push-pull circuits (530 with 534, and 532 with 536) for driving a load circuit complementary (driving downstream circuitry at differential outputs 506 and 508); a first current source circuit (568, 566, 572 and 570) for providing a first bias current (total current of transistors 566 and 570) flown to the pair of the push-pull circuits; a second current source circuit (586, 588, 590, 592) for having the first bias current (total current of 566 and 570 flows to the pair of push-pull circuits equals to total current 586 and 590 flown from the pair of push-pull circuits) flown from the pair of the push-pull circuits; a third current source circuit (580, 578) for capable of having a second bias current (the current of transistor 578) flown to the pair of the push-pull circuits; a fourth current source circuit (594, 596) capable of having the second bias current (current through transistor 590 which equals to current through transistor 578) flown from the pair of the push-pull circuits; and a control circuit (510) for turning on/off both the

second bias current flown by the third current circuit and the second bias current flown by the fourth current source circuit according to a control signal (504). Note that Figure 10 shows the control signal (504) is independent of drain voltages of the first to fourth current source circuits and independent of an input signal (data, data/), and that each push-pull circuit (530 with 534, and 532 with 536) comprises two conductive types of transistors (one for pull up and the other one of pull down). Also note that, one said second bias current is turned on, the second bias current is a constant current (current through 578 = current through 596 = constant). Also note that, for claims 19, 22, 23, 29 and 30, reading from Figure 10 as: the pair of push-pull circuit (530-534, 532-536), the control circuit (510), the control signal (504), the first bias current (total current flown through 566 and 570 to the pair of push-pull circuit), a second bias current (total current flown through 586 and 590 from the pair of push-pull circuits), a third bias current (current flown through transistor 578 which is a constant current when transistor 580 of the current circuit 578-580 turns on), and a fourth bias current (current flown through transistor 594 which is a constant current when transistor 594 of the current circuit 594-596 turns on).

Allowable Subject Matter

6. Claims 7-12, 14, 17, 20, 21, 24, 25, 27 and 28 are presently allowed.

Response to Arguments

7. Applicant's arguments filed 6/10/05 have been fully considered but they are not persuasive.

With respect to claim 13, applicant argues that the Hogeboom reference does not teach a control signal. However, this argument is not persuasive because the Hogeboom reference teaches the control circuit (90) controlling the third and fourth current sources circuits according

to the control signal (signal at node 220 in Figure 2). Note that the circuit 90 in Figure 2 providing biasing signals BP and BN according to signal at node 220 (BP and BN depends on signal at node 220, i.e., when signal at node 220 varies then BP and BN will also be varied), and the biasing signals BP and BN are used to control the transistors 70 and 80, respectively, which are the third and fourth current source circuits, respectively (i.e., when signal at node 220 varies then BP and BN will also be varied and thus the currents of transistors 70 and 80 will also be varied). Note that, as discussed above, the third current source circuit is transistor 70 in Figure 1 and the fourth current source circuit is transistor 80 in Figure 1 (the first and second current source circuits are transistors 71 and 81, respectively).

Further, for claim 13, applicant also argues that Hogeboom's node 220 is not a digitally generated signal, i.e., voltages are controlled in the analog mode, while the present invention the transistors are digital controlled, i.e., turned on or off. However, this argument is not persuasive because the limitation that the transistors are digital controlled are not recited in claim 13. Broadly, claim 13 recited a control circuit for varying the second bias current of the third and fourth current sources according to a control signal (note that claim 13 does not recite the control circuit for turns on or off the second bias current), and clearly the signal at node 220 controlled the third and fourth current sources as discussed above.

8. With respect to arguments for other claims (for claims 15, 16, 18, 19, 22, 23, 26, 29 and 30), the arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directly to Examiner Long Nguyen whose telephone number is (571) 272-1753. The Examiner can normally be reached on Monday to Thursday from 8:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached at (571) 272-1740. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 11, 2005

LONG NGUYEN
PRIMARY EXAMINER